STREL'BITSKAYA, A.I. [Strel'byts'ka, O.I.] (Kiyev); BIRYUKOVICH, Yu.L. [Biriukovych, IU.L.] (Kiyev); PRYADKO, E.A. [Priadko, E.O.] (Kiyev)

Experimental investigation of elastic-plastic oblique bending of thin-walled beams. Prykl.mekh. 6 no.3:289-301 '60. (MIRA 13:8)

1. Institut mekhaniki AN USSR.
(Girders)

STREL'BITSKAYA, A.I. [Strel'byts'ka, O.I.]

Experiments with steel beams in plastic bending with torsion. Dop.AN URSR no.9:1174-1179 '60. (MIRA 13:10)

1. Institut mekhaniki AN USSR. Predstavleno akademikom AN USSR F.P.Belyankinym.
(Girders) (Torsion) (Flexure)

25111
S/198/61/007/003/006/013
D264/D303

AUTHOR: Strel'bytskyy, O.I. (Kyyiv)

TITLE: Plastic bending and torsion of a frame, depending on changes in the length of its axis

PERIODICAL: Prykladna mekhanika, v. 7, no. 3, 1961, 279 - 286

TEXT: The article deals with the problem of the final state of a rectangular rectangular frame with a thin walled profile under bending with torsion due to a load acting parallel to the plane of the frame, applied with eccentricity relative to the center of bending of the cross-section. The value of the limiting load is determined from the ratio of the span and area of the frame. The following observations are made for a simplified diagram of stress-deformation in the horizontal and vertical directions.
(b)

$$\sigma^2 + \tau^2 = \sigma_T^2 \qquad (1)$$

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Plastic bending and ...

where σ is the normal stress, τ the tangential stress, and σ_T is the limiting flow under tension, (c) the limiting state of the profile is characterized the extension of flow in all directions, (d) from the limiting state can be determined the centers of plastic deformation which transform the system geometrically. The frame consists of rods of double-T section, arranged as in Fig. 2. F is a concentrated force acting at the center of the span, and parallel to the plane of the frame. The dimensions of the cross-section are h_c = 20 cm, b = 10 cm, δ, δ_η = 1 cm. The span-width is constant, (600 cm) and the height of the struts can be varied, giving 8 values for the ratio span:strut: 0.25, 0.33, 0.5, 1, 2, 6, 12, 24 [Abstractor's note: Symbols h_c, b, δ_c, δ_η are neither defined nor marked on the figure]. Calculations on frames of thin strips are explained in B.N. Gorbunov and A.I. Strel'bitskaya (Ref. 4: Priblizhennyye metody rascheta vagonnykh ram iz tonkostennykh sterzhney (Approximation Methods of Computing Carriage-Frames of Thin-Walled Stripe) Moscow, 1946). For a single-contour frame it is conveni-

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Plastic bending and ...

ent to use force and deformation methods. Equations are given for the method of force. The torsion is evaluated by formulae taken from Gorbunov and Strel'bitskaya (Ref. 4: Op.cit.). For a concentrated force acting at the center of the span with eccentricity e, the equation of equilibrium is given at joint 2 for a known deplanation $\varkappa_2$, where the turning moment in the span due to the external load is

$$M_{25}^{k} = - P \frac{e}{2}. \tag{5}$$

The bimoments at the end of the rods are

$$B_n = GI_d \left(\frac{\operatorname{ch} kl}{k \operatorname{sh} kl} \varkappa_n - \frac{1}{k \operatorname{sh} kl} \varkappa_n \right) + \frac{(\operatorname{ch} kl - 1)}{k \operatorname{sh} kl} M_n^k; \tag{6}$$

$$B_n = GI_d \left(\frac{\operatorname{ch} kl}{k \operatorname{sh} kl} \varkappa_n - \frac{1}{k \operatorname{sh} kl} \varkappa_n \right) + \frac{(\operatorname{ch} kl - 1)}{\operatorname{sh} kl} M_n^k.$$

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S/198/61/007/003/006/013
D264/D303

Plastic bending and ...

[Abstractor's note: Symbols not fully explained]. Analysis of the results shows that for a given l_p/l_c, the greatest moments and bimoments occur at the mid-point of the span and the upper joints of the frame, giving, in all cases, three centers of plastic deformation in the upper part. The plastic conditions for the section of maximum stress (bending moment M_p, bimoment B_p, turning moment H_p) are given neglecting longitudinal and transverse forces. The plastic condition for a section of the top of the strut, where the bending moment in the plane of the frame is M_c, the bending moment from the plane of the frame is M_z and the bimoment is B_c are

$$\frac{M_c}{\sigma_T T_x} - \frac{\delta_n}{2\delta_c \sigma_T T_x}\left(M_z + \frac{2B_c}{h}\right) - \frac{F_1}{2T_x} \times \qquad (8)$$

$$\times \left[h \pm \sqrt{h^2 - \frac{4}{\delta_c}\left(\frac{M_c}{\sigma_T} - T_x\right)}\right] = 1;$$

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Plastic bending and ...

Moreover, the bending moment from the plane of the frame equals the turning moment of the span. If this moment H_p does not occur in the equation for the section of greatest stress of the span, then the limiting load is given by

$$P = \frac{4}{l_p}\sigma_T\left(A + \frac{J}{V}\right). \qquad (21)$$

where

$$A = -2C\left(\frac{B_p}{M_p} - D\right) + 2\sqrt{C^2\left(\frac{B_p}{M_p} - D\right)^2 + CT_*K}\ . \qquad (20)$$

When the turning moment is present, the limiting load is somewhat less (5 - 6 % for eccentricity 6 cm). The ratio P/σ_T is evaluated for various values of e, with l_p/l_c equal to 0.33, 0.5, 1, 6, and the results are shown graphically. The author concludes that for a single-contour frame with a concentrated load on the span acting

Plastic bending and ...

parallel to the plane of the frame, the load increases and decreases with l_p/l_c, whereas a small increase in eccentricity causes a large decrease in the limiting load. There are 4 figures, 4 tables and 12 Soviet-bloc references.

ASSOCIATION: Instytut mekhaniky AN URSR (Institute of Mechanics, AS UkrSSR)

SUBMITTED: October 15, 1960

Card 6/7

32561
S/198/61/007/006/004/008
D299/D301

10 6000 1327

AUTHOR: Strel'byts'ka, O. I. (Kyyiv)

TITLE: Calculating frames according to the ultimate state under torsion-bending

PERIODICAL: Prykladna mekhanika, v. 7, no. 6, 1961, 639-648

TEXT: The carrying capacity is studied of rectangular frames under loads, perpendicular to the frames, the load being applied to a span piece, eccentric with respect to the center of bending. The carrying capacity and the ultimate load depend on the ratio of the length of frame elements as well as on the eccentricity of the applied load. The frame is calculated by the method of deformations. Thereby, formulas for the stresses are derived, as well as for the bending- and torsion moments and the bimoments. A numerical example is given, with different ratios of length of span piece to length of cross piece. A comparison of stress values shows that the frames under consideration have several types of ultimate states, depending on the length of ratio of span piece l_s to cross piece l_c. In

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Calculating frames according ...

frames with long cross pieces, the carrying capacity will be exhausted with development of plastic flow in 2 cross sections near the framing, where the stresses are maximal. With decreasing length of the cross pieces, the ultimate state of the frame can be related to the transition of the span-piece sections to plastic state, or to simultaneous development of plastic flow in the span- and cross piece sections. Two basic schemes of ultimate state are considered: 1) $l_s < l_c$, the ultimate state occurring with the formation of 2 plastic cross sections near the cross-piece framing; 2) $l_s > l_c$, with three plastic cross-sections at the span piece. These 2 cases are considered with reference to a frame whose characteristics are listed in a table. The frame is under the action of a concentrated force P, which causes torsion and bending. The ultimate load is determined by means of a system of equations, involving the plasticity conditions and the equilibrium equations. By the obtained formulas, the ultimate load is calculated for 8 different ratios of length of span piece to cross piece. The results of the calculations are listed in tables. It was found that with decreasing length

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Calculating frames according ...

of the cross piece, the value of the ultimate load increases. With small ratios l_s/l_c, the increase in the ultimate load takes place rather sharply. With moderate and large values of l_s/l_c, the ultimate load increases gradually. There are 6 figures, 4 tables and 6 Soviet-bloc references.

ASSOCIATION: Instytut mekhaniky AN URSR (Institute of Mechanics AS UkrRSR)

SUBMITTED: June 7, 1961

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STREL'BYTSKAYA, A.I. [Strel'byts'ka, O.I.]

Nikola Dmitrovich Zhudin (on the occasion of his 70th birthday).
[illegible] 682-683 '61. (MIRA 14:11)
(Zhudin, Nikola Dmitrovich, 1891-)

STREL'BITSKAYA, A.I. [Strel'byts'ka, O.I.]; PRYADKO, E.A. [Priadko, E.O.]; YEVSEYENKO, G.I. [Ievsieienko, H.I.]

Experimental study of the behavior of a channel bar during plastic bending with torsion. Dop. AN URSR no.9:1127-1132 '61. (MIRA 14:11)

1. Institut mekhaniki AN USSR. Predstavleno akademikom AN USSR F.P.Belyankinym [Bieliankin, F.P.].
(Strains and stresses)

STREL'BITSKAYA, A.I. [Strel'byts'ka, O.I.]

Bearing capacity of thin-walled beams subjected to lateral bending. Zbir.prats'. Inst.mekh.AN URSR no.23:117-134 '61. (MIRA 14:12)

(Beams and girders)

STRELBITSKA, O.I.

37583

S/198/62/008/003/003/008
D407/D301

10 7/10⁰

AUTHOR: Strel'byts'ka, O.I. (Kyyiv)

TITLE: Elastic-plastic stresses state of thin-walled profiles under torsion and bending

PERIODICAL: Prykladna mekhanika, v. 8, no. 3, 1962, 258 - 270

TEXT: Working formulas are obtained for the elastic-plastic stressed state of thin-walled profiles under the combined action of torsion and bending. Beams most commonly met in practice (with an I-section or channel section) are investigated. The normal stresses in the beams are due to the bending moments M_x and bimoments B. Formulas are derived for M_x and B for various stages of plastic flow in the beam cross-section, related to the change in eccentricity of the applied stress with respect to the bending center. In deriving the formulas, a simplified stress-strain diagram of the material is taken, characteristic of profiles of low-carbon steel. The I-profile is considered first. The normal-stress distribution was studied for the following cases: 1) Bending prevails, 2) torsion prevails, 3)

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Elastic-plastic stresses state of ...

bending and torsion are nearly equal. At the initial stage of plastic deformation (case 1), the web can be in the elastic state, and then passes into the plastic state. For the bending moment one obtains the formula

$$M_x = \sigma_{T\Pi}\delta_\Pi \frac{h}{2}\left[b + 2u - a - \frac{1}{a}\left(u - \frac{b}{2}\right)^2\right] + \sigma_{TC}\delta_C\left(\frac{h^2}{4} - \frac{c^2}{3}\right), \quad (1.2)$$

where u is the distance of the zero point of the flanges from the y-axis; a and c - the lengths of the elastic fibers of the flange and web, respectively; $\sigma_{T\Pi}$ and δ_Π - the stresses at the ends of the flanges; σ_{TC} - the yield point of the web; e - the eccentricity of the applied load. If the bending moment and torque are both fairly large and increase simultaneously, then the beam is in the plastic state; formulas are derived for M_x, B and for the limit load, as well as a formula which connects M_x and B in the critical state. If the effect of torsion is great (i.e. with great eccentricities of the applied load), the normal stresses at the web of the I-beam do not reach the yield point. The pertinent formulas are derived. Fur-

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ther, beams with channel section are considered. Here, too, three cases are discussed (bending prevails, torsion prevails, or both increase simultaneously). Formulas, analogous to those for the I-beams are derived. The obtained results can be used in design of thin-walled structures and their elements, in both the elastic-plastic and the critical state. There are 6 figures and 5 Soviet-bloc references.

ASSOCIATION: Instytut mekhaniky AN URSR (Institute of Mechanics of the AS UkrRSR)

SUBMITTED: December 13, 1961

X

STREL'BITSKAYA, A. I. [Strel'byts'ka, O. I.] (Kiyev)

Ultimate state of frames made of thin-walled sections and subjected to torsional load. Prykl. mekh. 8 no.6:627-638 '62. (MIRA 15:10)

1. Institut mekhaniki AN UkrSSR.

(Structural frames)

STREL'BITSKAYA, A.I. [Strel'byts'ka, O.I.]

Ultimate state of thin-walled beams in biaxial flexure with torsion. Dop.AN URSR no.12:1571-1575 '62. (MIRA 16:2)

1. Institut mekhaniki AN UkrSSR. Predstavleno akademikom AN UkrSSR F.P. Belyankinym [Bieliankin, V.P.].
(Beams and girders) (Elasticity) (Torsion)

KORNOUKHOV, Nikolay Vasil'yevich, akademik; BELYANKIN, F.P., akademik, otv. red.; STREL'BITSKAYA, A.I., doktor tekhn. nauk; AMIRO, I.Ya., kand. tekhn. nauk, red.; DLUGACH, M.I., kand. tekhn. red.; YEREMENKO, V.S., kand. tekhn. nauk, red.; NIKITIN, Yu.P., kand. tekhn. nauk, red.; PAVLOV, I.G., kand. tekhn. nauk, red.; POLYAKOV, P.S., kand. tekhn. nauk, red.; KIYANITSA-GUSLISTAYA, N.N., mlad. nauchn. sotr., red.; ORLIK, Ye.L., red.; LISOVETS, A.M., tekhn. red.

[Selected works on structural mechanics] Izbrannye trudy po stroitel'noi mekhanike. Kiev, Izd-vo AN Ukr.SSR, 1963. 321 p. (MIRA 17:2)

1. Akademiya nauk Ukr.SSR (for Kornoukhov, Belyankin).

STREL'BITSKAYA, A. I.[Strel'byts'ka, O. I.] (Kiyev)

Carrying capacity of thin-walled rods subjected to oblique bending and torsion. Prykl. mekh. 9 no.3:275-287 '63.
(MIRA 16:4)

1. Institut mekhaniki AN UkrSSR.

(Elastic rods and wires)

STREL'BITSKAYA, A.I. [Strel'byts'ka, O.I.]; KRITSUK, A.A. [Krytsuk, A.A.]

"Elasticity and plasticity; collected problems and examples" by W. Krzys, M. Zyczkowski. Reviewed by O.I. Strel'byts'ka, A.A. Krytsuk. Prykl. mekh. 9 no.4:448-449 '63. (MIRA 16:8)

STREL'BITSKAYA, A.I. [Strel'byts'ka, O.I.] (Kiyev); YEVSEYENKO, G.I. [IEvsieienko, H.I.] (Kiyev)

Experimental investigation of stresses in H-beams subjected to elastoplastic bending with torsion. Prykl. mekh. 9 no.6: 627-637 '63. (MIRA 16:12)

1. Institut mekhaniki AN UkrSSR.

[redacted], A.I. (Kiev)

"Limiting loads for frames composed of thin-walled bars under combined bending and torsion"

Report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow 29 Jan - 5 Feb 64.

STRELBITSKAYA, A. I.

S/0198/64/010/003/0343/0345

ACCESSION NR: AP4037995

AUTHOR: Strel'by*ts'ka, O. I.

TITLE: Second All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 Jan to 5 Feb 64

SOURCE: Pry*kladna mekhanika, v. 10, no. 3, 1964, 343-345

TOPIC TAGS: mechanics, dynamics, plate, shell, elasticity, plasticity, viscosity, rheology, flow, celestial ballistics, plasma, creep, solid body

ABSTRACT: The natsional'ny'y komitet SRSR z teorety'chnoyi ta pry'kladnoyi mekhaniky' (the National Committee of the SRSR for Theoretical and Applied Mechanics) together with the Insty'tut Mekhaniky' AN SRSR (the Institute of Mechanics AN SRSR) and Moskovs'ky'y Derzhavny'y Universy'tet imeni M. V. Lomonosova (Moscow State University) convoked and conducted at Moscow from 29 Jan 64 to 5 Feb 64 the Second All-Union Congress on Theoretical and Applied Mechanics, the sessions of which were held at Moscow State University. The Organization Committee consisted of the following 28 members: I. I. Artobolevs'ky'y, N. Kh. Arutyunyan, G. I. Barenblatt, L. O. Galin, O. L. Gol'denveyzer, G. Yu. Dzanelidze (Deceased), A. A. Dorodnitsy'n, O. Yu. Ishlins'ky'y, S. V. Kalinin, L. M. Kachanov, M. V.

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ACCESSION NR: AP4037995

Keldy'sh, P. Ya. Kochy'na L. G. Loytsyans'ky'y, A. I. Lur'ye (deputy chairman), Yu. o. My'tropol's'ky'y, G. K. My'khaylov (scientific secretary), N. N. Moysyeyev, M. I. Muskhelishvili (chairman), O. O. Nikol's'ky'y (deputy chairman), D. Ye. Okhotsim's'ky'y, G. I. Petrov, I. M. Rabinovy'ch, Yu. M. Rabotnov (deputy chairman), V. V. Rumyantsev, L. I. Syedov (first deputy chairman), V. V. Sololovs'ky'y, G. G. Chorny'y and D. I. Sherman. The Congress was opened at a plenary session which Academician M. I. Muskhelishvili addressed. M. V. Keldy'sh welcomed the participants in the name of the Academy of Sciences SRSR, and Academician G. I. Petrovs'ky'y, rector of Moscow State University, in the name of the University. L. I. Syedov spoke on "Galilèo and the principles of mechanics." Three sections held meetings: Section I. General and Applied Mechanics (O. Yu. Ishlinsk'ky'y, chairman) with the subsections: (1) Analytic mechanics and theory of the stability of motion; (2) Celestial ballistics; (3) Vibrations and control; (4) Gyroscopy; (5) Theory of mechanisms and machines; (6) Problems of interpretation in mechanics. Section II. The Mechanics of Liquids and Gases (L. I. Syedov, chairman) with the subsections: (1) General hydrodynamics; (2) Aerodynamics and gas dynamics; (3) the theory of plasmas and rarefied gases; (4) the motion of viscous liquids, boundary layers, turbulence and heat transfer; (5) the hydrodynamics of multicomponent systems; (6) applied fluid dynamics. Section III. The Mechanics of Solid Bodies

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ACCESSION NR: AP4037995

(M. I. Muskhelishvili, chairman) with the subsections: (1) Theory of elasticity; (2) theory of elasticity; (3) theory of plates and shells; (4) Rheology and theory of creep; (5) Structural mechanics; (6) the mechanics of soils. The reports presented in Sections I and II are not given. The following reports were presented in Section III: V. I. Foodos'ev, "On the stability of deformed systems;" G. Ya. Popov and N. A. Rostovtsev, "Contact (mixed) problems of the theory of elasticity;" L. I. Vorovy'ch, "Some mathematical problems of the theory of plates and shells;" Yu. M. Rabotnov, "The creeping of metals;" P. O. Rebinder, "Paths of the development of the physicochemical mechanics of disperse structures and solid bodies:" G. I. Barenblatt, "The mechanics of brittle destruction;" V. V. Novozhy'lov, "Some problems of plasticity under convolutional loading;" V. Prager, "On the theory of elastic materials with ideal hardenings;" D. Ch. Draker, "On the postulate of the stability of material in the mechanics of entire mediums;" N. V. Zbolins'ky'y, B. M. Maly'shev and G. S. Shapiro, "The dynamics of plastic mediums;" V. Novats'ky'y, "Mixed boundary conditions in the theory of elasticity;" V. Ol'shak, "Equations of state of elastic-viscous-plastic soils;" and by workers of the Institute of Mechanics SSSR: G. A. Pang Fo Fi, "On the equations of state of bodies with rheologically nonuniform structure;" M. O. Kil'chens'ky'y, "Continuous problems of analytical mechanics;" M. O. Kil'chens'ky'y "Problems of the theory of shells that ensue from

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ACCESSION NR: AP4037995

differential-integral equations of motion;" A. D. Kovalenko, "Precise analytical solutions for rotary shells;" G. M. Savin, "The concentration of loads around curvilinear openings in plates and shells;" G. M. Savin and N. P. Fleyshman, "Plates with curvilinear rough rims;" O. I. Strel'by'ts'ka, "Boundary loads of frames of thin-walled rods with twisting curves" -- in the form of presented reports; L. P. Khoroshun, "The thermodynamic principles of rheology." At the conclusion of the congress, representatives of scientific delegations from the United States, Great Britain, Poland, Rumania, France and Holland expressed their appreciation for being invited to the congress. Decisions were adopted to publish the materials of the Second Congress and to hold the Third Congress in 1968.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 12Jun64 ENCL: 00

SUB CODE: ME NO REF SOV: 000 OTHER: 000

Card 4/4

STREL'BITSKAYA, A.I. [Strel'byts'ka, O.I.] (Kiyev); PRYADKO, E.A. [Priadko, E.O.] (Kiyev); YEVSEYENKO, G.I. [Evseienko, H.I.] (Kiyev)

Torsional bending test of thin-walled channel bars in elasto-plastic state. Prykl. mekh. 10 no.3:271-282 '64. (MIRA 17:6)

1. Institut mekhaniki AN UkrSSR.

L 11738-65 EWP(k)/EWT(d)/EWT(m)/EWP(v)/EWP(v) Pf-4 EM

ACCESSION NR AM5004509 BOOK EXPLOITATION S/

17
15
B+!

Strel'bitskaya, Aleksandra Ivanova

Limit state of thin-walled member frames under flexure combined with torsion (Predel'noye sostoyaniye ram iz tonkostennykh sterzhney pri izgibe s krucheniyem), Kiev, Naukova dumka, 1964, 254 p. illus., biblio. 2,540 copies printed. (At head of title: Akademiya nuak Ukrainskoy SSR. Institut mekhaniki)

TOPIC TAGS: structural mechanics, structural frame

PURPOSE AND COVERAGE: This monograph investigates single-contour thin-walled metal rod frames in bending and in bending with torsion. It proposes methods of calculating their limit state. The book studies the plastic state of thin-walled profiles in complex resistance induced by biaxial bending, torsion, and elongation; the finite relationships between forced components are obtained. The loading carrying capacity of single frames in bending under vertical and horizontal loads in the plane of the frame is established. The book considers the limit state of frames in bending with torsion for the basic types of loads on a cross bar parallel to the plane of the frame or perpendicular to it with some eccentricity relative to the center of bending. It suggests formulas

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for determining the limit load considering the effect of the ratio of the load lengths of the frame, the character of the load, and the amount of eccentricity. The book compares these calculations with calculations for the elastic state. The book is intended for researchers, engineers and technicians in aviation construction, machine building, railroad car construction, shipbuilding and other technologies and can be used by students and graduate students of higher educational institutions.

TABLE OF CONTENTS [abridged]:

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ACCESSION NR AM5004509

SUBMITTED: 25Sep64

SUB CODE: AS

NO REF SOV: 008

OTHER: 032

Card 3/3

STREL'BITSKAYA, A.I. (Kiyev)

Limiting loading of frames made of thin-walled rods and subjected to torsional bending. Prikl. mekh. 1 no.1:70-76 '65. (MIRA 18:5)

1. Institut mekhaniki AN UkrSSR.

L 48593-65 EWT(d)/EWT(m)/EWP(w)/EPF(c)/EWA(d)/EWP(v)/EPR/EWP(j)/T-2/EWP(k)/
EWA(h) Po-4/Pf-4/Pr-4/Ps-4/Peb PG/WW/EM/RM

ACCESSION NR: AP5011787 UR/0198/65/001/004/0139/0141

71
49

AUTHOR: Strel'bitskaya, A. I.

Title: Fifth All-Union Conference on the Theory of Plates and Shells

SOURCE: Prikladnaya mekhanika, v. 1, no. 4, 1965, 139-141

TOPIC TAGS: solid mechanics, aerospace conference, shell structure, flat plate, structure stability, metal plasticity, metal elasticity

ABSTRACT: The Fifth All-Union Conference on the Theory of Plates and Shells, held in Moscow from 3 to 6 February 1965, was organized by the Institute of Problems of Mechanics of the Academy of Sciences USSR, the Scientific Council for Strength and Plasticity, and the Moscow State University. The chairman of the organization committee A. L. Goldenveyzer announced that

by cities: Moscow, 575; Leningrad, 93; Kiev, 83; Khar'kov, 53; Dnepropetrovsk, 32; Kazan, 32; Novosibirsk, 23; Rostov-on-Don, 21; Yerevan, 19; and other cities, 116. The breakdown by age was as follows: up to 35, 603; 35 to 45, 279; 45 to 55, 101; 55 to 60, 57; over 60, 7.

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ACCESSION NR: AP5011787

I. M. Veksel'man, the representative of the Publishing House for Foreign Literature presented information on "New books abroad."

The conference was divided into five sections:

1. Section for General Problems of Plate and Shell Theory, with three subsections (Chairmen: S. A. Alekseyev, V. M. Darevskiy, A. V. Karneishin). Seventy-two papers were delivered concerning anisotropic plates and shells, shells with holes, thermal problems, stiffened shells, membrane stresses in shells, et cetera.

2. Section for Stability and Nonlinear Problems of Plate and Shell Theory, with two sub-sections (Chairmen: A. S. Vol'mir, V. I. Feodos'yev). Fifty-five papers were presented on general and particular problems of stability and creep buckling; there was also a discussion on the mechanism of the earth-crust deformation.

3. Section for Plate and Shell Dynamics (Sub-Section Chairmen: V. V. Bolotin, L. I. Balabukh). Fifty-five papers were presented on aeroelasticity, hydroelasticity, impact and wave processes, random vibration of shells, et cetera.

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4. Section for Plasticity and Creep of Plates and Shells (Chairmen: Yu. N. Rabotnov, A. S. Grigor'yev). About 30 papers were given mainly on elastic-plastic equilibrium; a few papers were concerned with the theory of limit equilibrium. Problems of the use of materials with limited creep were also discussed.

5. Section for Structural Mechanics of Plates and Shells (Chairmen: A. A. Umanskiy, R. A. Adadurov). More than 50 papers were presented on the reduction of continuous systems to discrete ones, development of the V. Z. Vlasov engineering theory, the study of firmed and net-type shells, experimental investigations, et cetera.

The number of papers devoted to numerical methods of plate and shell design with the use of electronic digital computers increased considerably in comparison with the preceding conferences but not enough attention was

systems; a relatively small number of papers were devoted to experimental investigations.

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ACCESSION NR: AP5011787

In regard to future developments, it is desired that more attention be paid to shells made of plastics; papers lacking concrete results or not completed should be considered deficient, and a special section for creep problems should be established at the next all-union conference on the theory of plates and shells, which is to be held in September 1966 in Baku.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: AS, ME

NO REF SOV: 000 OTHER: 000 ATD PRESS: 3244-F

Card 4/4

STREL'BITSKAYA, A.I.

The Fifth All-Union Conference on the Theory of Plates and Shells, Febuary 3-6, 1965, in Moscow. Prikl. mekh. 1 no.4: 139-141 '65. (MIRA 18:4)

L 27184-66 EWT(m)/EWP(w) EM

ACC NR: AP6016880 SOURCE CODE: UR/0198/65/001/009/0065/0080

AUTHOR: Strel'bitskaya, A. I. (Kiev); Yevseyenko, G. I. (Kiev)

ORG: Institute of Mechanics, AN UkrSSR (Institut mekhaniki AN UkrSSR)

TITLE: Experimental investigation of biaxial plastic torsional bending of thin-walled rods

SOURCE: Prikladnaya mekhanika, v. 1, no. 9, 1965, 65-80

TOPIC TAGS: steel, metal bending, fabricated structural metal, material deformation

ABSTRACT: The authors consider the complex resistance of thin-walled rods subjected to the combined effect of biaxial bending and twisting beyond the elastic limit. The theoretical calculations are confirmed by experimental data on the behavior of rolled I-section and channel-profile rods rigidly fastened at one end and loaded at the free end by forces applied at various angles of inclination. The testing procedure is described, and the mechanical characteristics of the steel used in making the rod are given. The experiments were conducted to study the elastoplastic behavior and maximum resistance of the rods (with respect to strength) for the case of oblique torsional bending, to plot stress diagrams for the cross section at the fixed end, to determine flexures and twisting angles during loading and unloading,

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ACC NR: AP6016880

to find the maximum load for the rods at various loading angles, and also for a comparison between empirical and theoretical data. Diagrams for relative deformation of fibers are nonlinear both for the elastic state and beyond the elastic limit. A noticeable increase in deformation at the free end of the rod and yield diffusion at the fixed end are characteristic features of the limiting state. In channel rods, yield diffusion is accompanied by a reduction in loading. The elastic limit and carrying capacity of the rods diminishes with an increase in the loading angle of the external force. The experimental values of the maximum load were somewhat higher in channel rods and somewhat lower in I-section rods than the theoretical values. The greatest divergence was about 5%. An increase in the external loading angle is accompanied by somewhat of a reduction in the vertical component of flexure and an increase in the horizontal component. The twisting angles due to loading vary only slightly. Orig. art. has: 10 figures, 17 formulas, and 4 tables. [JPRS]

SUB CODE: 11, 20 / SUBM DATE: 16Apr64 / ORIG REF: 007

L 07445-67 EWT(d)/EWT(m)/EWP(w) IJP(c) EM

ACC NR: AP6035494 (A) SOURCE CODE: UR/0198/66/002/010/0044/0053

32
31
8

AUTHOR: Strel'bitskaya, A. I. (Kiev); Kolgadin, V. A. (Kiev)

ORG: Institute of Mechanics, AN UkrSSR (Institut mekhaniki AN UkrSSR)

TITLE: Investigating the flexure of rectangular plates beyond elastic limit

SOURCE: Prikladnaya mekhanika, v. 2, no. 10, 1966, 44-53

TOPIC TAGS: rectangular plate, ~~plastic~~ elastic stress, plastic deformation

ABSTRACT: The behavior of rectangular plates subjected to flexure beyond the elastic limit is analyzed by utilizing the theory of small elastic-plastic deformations, and the method of elastic solutions combined with a finite difference method. The following assumptions are made: a) the regular concepts of the engineering theory of flexure are valid; b) the plate material (either compressible or incompressible) has a sharply expressed yield break; c) the plasticity condition is taken from the energy theory with the effect of transverse forces on tangential stresses omitted; and d) simple loading is considered. The boundaries of plastic zones on the plate surfaces and over its thickness are established in accordance with assumption (c), and expressions describing the relations between stresses and deformations beyond the elastic limit are derived by introducing a variable modulus of strain replacing the modulus of elasticity, so that the stress distributions in elastic-plastic cross sections of the plate can be determined. The equation for elastic-plastic equilibrium

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L 07445-67

ACC NR: AP6035494

of a plate element is derived with regard to assumption (b); it contains terms which account for the propagation of plastic stresses. This equation is rewritten in finite differences in a nondimensional form, and solved by successive approximations, taking the elastic solution as the zero approximation. The elastic-plastic state of strain in square and rectangular plates simply supported and clamped on all edges (of both compressible and incompressible material) under uniform lateral loading was investigated by the proposed method. The results (concerning the plastic zones on surfaces and across the thickness, along the axes of symmetry and at the edges, as well as the deflections and bending moments) are given in tables, illustrated by diagrams, and discussed at length, mainly the effects of boundary (support) conditions of plates, and of the plate material (compressible or incompressible) on the development of elastic-plastic zones in the plate. Orig. art. has: 7 figures, 2 tables, and 27 formulas.

SUB CODE: 20/ SUBM DATE: 28Apr66/ ORIG REF: 004/ OTH REF: 001/
ATD PRESS: 5104

Card 2/2

ACC NR: AP7003241 (A) SOURCE CODE: UR/0198/66/002/012/0001/0017

AUTHOR: Strel'bitskaya, A. I. (Kiev)

ORG: Institute of Mechanics, AN UkrSSR (Institut mekhaniki UkrSSR)

TITLE: Works on investigating the deflection of plates past the elastic limit (A survey)

SOURCE: Prikladnaya mekhanika, v. 2, no. 12, 1966, 1-17

TOPIC TAGS: elastic deformation, plastic deformation, flat plate, thin plate

ABSTRACT: Theoretical and experimental investigations in the elastic-plastic deflection of plates are reviewed. The theoretical effort in this area can be divided into the following four categories: circular plates, ring plates, long rectangular plates, and rectangular or square plates. Most of the work in circular plates deals with ideally plastic materials and utilizes the Kirchoff hypothesis. Both freely supported and fixed plates are considered with concentric or uniformly distributed loads. In the case of ring plates, both inner and outer contours are almost circular, with freely supported or fixed ends, with constant or variable cross sections under axisymmetric loadings. Works dealing with long rectangular plates neglect deflections in the longitudinal direction. Investigations dealing with the elastic-plastic state of rectangular and square plates are few in number. Most existing works include the load-carrying capacity of such plates. Several experimental investigations are cited for

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ACC NR: AP7003241

most of the theoretical problems. The experimental results in general indicate a greater need for understanding the elastic-plastic bending characteristics of metallic plates.

SUB CODE: 20/ SUBM DATE: 27Jun66/ ORIG REF: 098/ OTH REF: 062

Card 2/2

STREL'BITSKAYA, R.F.

Characteristics of orienting reaction in small children under prolonged presentation of stimuli. Vop. psikhol. 10 no.1: 145-149 Ja-F'64 (MIRA 17:3)

1. Kafedra pediatrii TSentral'nogo instituta usovershenstvovaniya vrachey.

STREL'BITSKAYA, F.F.

Characteristics of falling asleep and awakening in children with various typological properties of the higher nervous activity. Trudy TSIU 78:68-70 '65. (MIRA 18:9)

1. Otdel razvitiya i vospitaniya detey rannego vozrasta kafedry pediatrii (zav. otdelom prof. N.M. Aksarina) TSentral'nogo instituta usovershenstvovaniya vrachey.

SOV/144-59-9-8/15

AUTHOR: Strel'bitskiy, E.K., Lecturer

TITLE: The Pulsating Torque of Single-phase Electrical Machines

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Elektromekhanika, 1959, Nr 9, pp 56-60 (USSR)

ABSTRACT: In the classical papers on this topic the speed of rotation has been assumed constant. As a result the torque and power are given by Eqs (1) and (2). The first term in Eq (1) is the mean torque whilst the second, periodic at twice the supply frequency, is the pulsating torque (Fig 1). The latter is sinusoidal, as are the oscillations induced in the stator. The speed is, of course, not constant since differences between motor and load torque give rise to acceleration and deceleration. This paper studies the effect of speed variations in a small machine. The variation of mean torque and of the amplitude of the pulsating torque with slip is given in Eqs (4) and (5). The constants of proportionality k_1 and k_2 are assumed to be quite invariant as also is the load torque. The exact equation of motion is now Eq (7), which is solved in terms of slip as Eq (8). The variation of slip contains only even harmonics of shaft frequency

Card 1/2

STREL'BITSKIY, E. K.

Cand Tech Sci - (diss) "Study of vibrations of single-phase asynchronous electric motors of low power." Tomsk, 1961. 14 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Tomsk Order of Labor Red Banner Polytechnic Inst imeni S. M. Kirov); 150 copies; price not given; (KL, 10-61 sup, 219)

STREL'BITSKIY, E.K.

Unbalanced magnetic amplifiers in single-phase asynchronous motors with an uneven air gap. Izv. vys. ucheb. zav.; elektromekh. 4 no.10:37-42 '61. (MIRA 14:11)
(Electric motors, Induction)

MURAVLEV, O.P., inzh.; SANNIKOV, D.I., inzh.; STREL'BITSKIY, E.K., kand. tekhn. nauk

Concerning the use of a theoretical probability method for studying the reliability of electric machinery. Vest. elektroprom. 34 no.3:52-53 Mr '63. (MIRA 16:8)

(Electric machinery)

STRELBITSKIY, I., general-leytenant artillerii

Recollection of a regimental comrade-in-arms. Voen. znan. 41 no.8:
5 Ag '65. (MIRA 18:7)

STREL'BITSKIY, I.S.

The front is everywhere. Voen.znan. 36 no.3:10 Mr '60.
(MIRA 13:3)
(Women as soldiers)

STREL'BITSKIY, I., general-leytenant

Hill 115. Voen.znan. 36 no.11:23-25 N'60. (MIRA 13:11)
(Dnieper Valley--World War, 1939-1945)

STREL'BITSKIY, I., general-leytenant

Miners' honor. Voen. znan. 37 no.8:9-10 Ag '61. (MIRA 14:7)
(Donets Basin--World War, 1939-1945)

STREL'PITSKIY, I., general-leytenant

Night assault. Voen. znan. 37 no.9:8-9 S '61. (MIRA 14:9)
(Night fighting (Military science)) (World War, 1939-1945)

STREL'BITSKIY, I., general-leytenant

In the fire of battles. Voen. znan. 39 no.8:11-12 Ag '63.
(MIRA 16:8)
(World War, 1939-1945--Personal narratives)

L 40214-66 EWT(e)/EWT(m) JH

ACC NR: AP6018276 SOURCE CODE: CZ/0013/65/000/012/0370/0373

AUTHOR: Totes, A. S. (Leningrad); Grigorjeva, L. F. (Leningrad); Strelcina, M. V. (Leningrad); Roskova, G. P. (Leningrad)

44
B

ORG: None

TITLE: Effect of composition and various physicochemical properties of glass on the productivity of grinding and polishing processes

SOURCE: Sklar i keramik, no. 12, 1965, 370-373

TOPIC TAGS: silicate glass, hardness, grinding, chemical stability, GLASS PROPERTY

ABSTRACT: The authors study the effect of glass composition on its grinding strength, microhardness, microstrength, elasticity and chemical stability, and also investigate the grinding strength as a function of changes in these properties. Specimens of glass in the R_2O-RO-$4SiO_2$ system were founded from chemically pure materials and silica sand in quartz crucibles at 1400-1450°C. The analytical compositions of the various types of glass are tabulated. The alkali components were lithium, sodium and potassium, while the metals used in the RO component were Mg, Ca, Zn, Sr, Cd, Ba, Pb and Be. Some types of commercial glass were also studied: quartz, borosilicate, barium crown and flint glass. Synthetic corundum was used for grinding the specimens after which they were polished with colcothar. The methods and equipment used for the measure-

Card 1/2 UDC: 666.11.016.2 666.1.053.511 666.1.053.512

L 40214-66
ACC NR: AP6018276

ments are briefly described. Relationships are established between various properties of the glass and the radii of the univalent and bivalent metal ions in the glass composition. Analysis of the experimental data shows parallel behavior of grinding and polishing properties for most of the glasses studied. The direct relationship between these properties indicates that the same processes take place in grinding and polishing glass. An exception to this rule is glass containing lead which is ground much more rapidly than the other types of glass while having comparable polishing properties. The polishing properties of the various types of glass may be compared with their microhardness and chemical stability to determine whether the surface layer is mechanically eliminated during polishing. Orig. art. has: 8 figures, 2 tables.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 011/ OTH REF: 003

Card 2/2

STRELBITSKIY, V.S.

The [illegible] shelter-planter. Bill. tekh.-ekon. inform. Gos. nauch.-issl. inst. nauch. i tekh. inform. IT no.12:45-46 D '54. (MIRA 18:3)

LYANITSKIY, V.Ye., professor, doktor tekhnicheskikh nauk; SMORODINSKIY, N.A., dotsent; SHTENTSEL', V.K., dotsent; KAGAN, Ya.Kh., kandidat tekhnicheskikh nauk; ROMASHEV, D.G., inzhener; STREL'CHENI, M.M., inzhener.

[Harbor hydraulic-engineering installations] Portovye gidrotekhnicheskie sooruzheniia. Moskva, Izd-vo Ministerstva morskogo i rechnogo flota SSSR. Part 1. 1953. 624 p. (MLRA 6:12)
(Harbors) (Hydraulic engineering)

Strel'chenko, A.G.

PHASE I BOOK EXPLOITATION SOV/3778

Ukrainian SSR. Gosudarstvennaya planovaya komissiya

Avtomatizatsiya i priborostroyeniye; sbornik nauchnykh trudov, vyp. 1. (Automation and Instrument Making; Collected Scientific Works, No. 1) Kiyev, Gostekhizdat UkrSSR, 1959. 107 p. 3,000 copies printed.

Ed.: V. Demskiy; Tech. Ed.: K. Gusarov; Editorial Board: P.M. Mel'nik (Chief Ed.), N.T. Zharov, G.S. Kryshtab, I.A. Orlov, (Resp. Ed.), L.A. Shoykhet, and N.V. Yarin.

PURPOSE: This collection of articles is intended for scientific and technical workers and for students of schools of higher education specializing in automation, telemechanics, and computing.

COVERAGE: The collection contains papers on the automation of metallurgical, chemical and power engineering and on the development of new instruments, telemechanical units, and a program control system for turret lathes. A bibliography on automatic analysis of solutions containing 86 items: 42 Soviet, 34 English, 5 German, 4 French and 1 Polish, is included. No personalities are mentioned.

AUTOMATION OF INDUSTRIAL PROCESSES

AUTOMATION EQUIPMENT

AUTOMATIC CONTROL

KOROBKO, M.I.; STREL'CHENKO, A.G.; KOROTKEVICH, V.N.; KOZLYUK, V.I.; TYSHKO, A.I.; ARTYNSKIY, V.M.

Automatic control of thermal processes in an open-hearth furnace. Avtom.i prib. no.1:9-14 '59. (MIRA 13:10)
(Electronic control) (Open-hearth furnaces)

S/131/61/000/002/001/002
B 105/B206

AUTHORS: Samsonov, G. V., Kislyy, P. S., Panasyuk, A. D., Strel'chenko, A. G., Khavrunyak, I. G., Serikova, G. N.

TITLE: Shield tubes from zirconium boride for immersion thermocouples

PERIODICAL: Ogneupory, no. 2, 1961, 72-74

TEXT: The article describes experiments and studies leading to the manufacture of shield tubes from zirconium boride which have a high thermal resistivity. Shield tubes produced from zirconium dioxide, which withstand immersion into molten steel at 1650-1720°C for a short time, were elaborated at the Leningradskiy tekhnologicheskiy institut imeni Lensoveta (Leningrad Technological Institute imeni Lensovet). Studies of their stability in molten cast iron and steel, made at the laboratoriya tugoplavkikh materialov (Laboratory for High-melting Materials) of the Institut metallokeramiki i spetsial'nykh splavov AN USSR (Institute of Powder Metallurgy and Special Alloys AS UkrSSR), showed that zirconium boride ZrB_2 is of extremely high thermal resistivity and thus well suited

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Shield tubes from zirconium boride ... S/131/61/000/002/001/002
B105/B206

for shield tubes of thermocouples. Such a shield tube is schematically shown in Fig. 1. The blanks of the shield tube are dried and sintered in an electric furnace at a temperature of 2050-2200°C. The sintered shield tubes have a fine-grained fracture and a porosity of 5-12%. Shield tubes with an outer diameter of 11 and 16 mm and an inner diameter 4 and 7 mm were made. They were tested at the following metallurgical plants: zavod "Zaporozhstal'" ("Zaporozhstal'" Plant), zavod im. Dzerzhinskogo (Plant imeni Dzerzhinskiy), Alchevskiy zavod (Alchevskiy Plant), as well as the Kiyev plants: zavod "Bol'shevik" ("Bol'shevik" Plant) and zavod "Leninskaya kuznitsa" ("Leninskaya kuznitsa" Plant). When testing the shield tubes in molten cast iron at 1400 to 1450°C in a Kryptol furnace, it was found that they are only slightly covered by slag and not corroded, and that they maintain their initial structure. When tested during tapping of cast iron in a blast furnace, they withstand 15 tappings with a total stay of 10 hr 53 min in molten metal. In an open hearth furnace with basic lining, shield tubes are corroded by basic slags and destroyed after 30-40 min. The outer diameter of the shield tubes is not reduced during immersion in molten steel and a stay of

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40 45 min. In small open-hearth furnaces, shield tubes withstood the total melting time (2 hr) without any damage. Their thermal resistivity is determined by the number of immersions into the tank of the open-hearth furnace and is at least 15 to 20 immersions, permitting the temperature of the steel to be regulated during the entire heating-up period. At the Kiyevskiy armaturno-mekhanicheskiy zavod (Kiyev Plant for Fittings and Mechanical Equipment), zirconium boride shield tubes withstood 86 hr in molten brass at 850 ± 50°C without any damage. At the "Leninskaya kuznitsa" Plant, the same results were obtained during a test in molten bronze of the type АМЦ-10-2 (AMTs-10-2). Besides the authors, A. G. Petrenko, Ya. S. Gayvoronskiy, N. M. Tenishev, V. G. Tishchenko, I. R. Krichker, G. G. Bespalyy, G. A. Yasinskaya, as well as collaborators of the plants mentioned participated in this study. Shield tubes from silicon nitride (Si_3N_4) also show high stability in molten brass at 850°C. The high stability of zirconium boride shield tubes in molten steels and cast iron makes it possible to use them in tanks of open-hearth furnaces, blast furnace channels, and steel ladles. Zirconium boride shield tubes showed high stability in molten bronzes and brass. Continuous temperature measurement of metals in melting furnaces can be

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Shield tubes from zirconium boride ... S/131/61/000/002/001/002
B105/B206

made with their aid. There are 3 figures and 6 Soviet-bloc references.

ASSOCIATION: Institut metallokeramiki i spetsial'nykh splavov AN USSR (Institute of Powder Metallurgy and Special Alloys AS UkrSSR) Samsonov, G. V., Kislyy, P. S., Panasyuk, A. D.; Institut avtomatiki Gosplana USSR (Institute of Automation of the Gosplan of the UkrSSR) Strel'chenko, A. G., Khavrunyak, I. G., Serikova, G. N.

Card 1/1

S/119/62/000/001/004/011
D201/D302

AUTHORS: Berezovskiy, M.A., Korobko, M.I., Saulova, L.V., and Strel'chenko, A.G.

TITLE: Multitrack recording instruments and devices for multi-point and multi-channel control

PERIODICAL: Priborostroyeniya, no. 1, 1962, 15 - 19

TEXT: The authors briefly describe the following multi-track recording instruments developed at the Institut avtomatiki Gosplana USSR (Institute of Automation of State Planning of the UkrSSR). 1) A six-point recorder for operation in conjunction with inductive pick-ups; developed from the six point electronic automatic bridge type ЭМП-209 (EMP-209). 2) A six-channel flow, pressure or consumption meter to work with original ferro-dynamic transducers, based on the electronic pen-recorder type КВТ (KVT) in production in East Germany. 3) A multi-channel temperature recorder and controller, based on the automatic electronic potentiometer ЭПП-09 (EPP-09). The new instrument incorporates a switched electronic controller type РЭП -

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Multitrack recording instruments ...

2C (REP-2S). In this controller, as opposed to the existing controllers ЭРС-67 (ERS-67) and ЭРК-77 (ERK-77), the readings of control intervals are independent of the formation of output signals. For multi-point control, the Institute has developed a switching, six-position unit type БПУ-6 (BPU-6). A further development of it, a multi-channel control device type РЭП-6 (REP-M6) makes it possible to adjust every control channel for the specific dynamics of the object. The use of the control arrangement REP M6 or ЭРУ-7К (ERU-7K) in conjunction with the switching unit BPU 6 makes it possible to obtain a multi-channel, multi-point control of up to 100 points. The following other automation devices have also been developed at the Institute. 1) Electronic control device type РЭП-ИМ (REP-IM). Its measurement section takes the form of an a.c. bridge, the control section consists of a set of four electronic time relays, using type 6НИП (6NIP) valves and electromechanical relays. The device is quite flexible in operation. 2) Electronic control device type РЭП 2 (REP 2). A more sensitive variant of REP 2). A more sensitive variant of REP IM with self-synchronizing output relays and a thyratron for indication of control operation. 3) Elec-

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Multitrack recording instruments ...

tronic control device type РЭП 3 (REP 3), developed for controlling high-resistance (ferro dynamic) pick-ups which require higher input voltages. This has been achieved by using a 6Ж5П (6Zh5P) pentode at the input. The response is logarithmic which, however, does not introduce noticeable distortion of the static characteristic of the controller. For sequential multi-point control using type REP controllers, the latter are used in conjunction with switching units BPU-6. Each of the controllers of the above type, has a contact controlling the BPU operation in such a manner, that after the control device has been switched to the control position, the BPU connects to it the pick-up and the output of the next object. The circuit of the BPU device represents a ring circuit, designed around cold cathode thyratrons type МТХ-90 (MTKh-90), which can switch from 2 ... 6 controlled points. The instruments of multi-point sequential control type ЭМПР (EMPR) and ЭППР (EPPR) are used as the basis for REI-2S instruments, the modification consisting of adding another bank of commutators to the switch and by replacing the discs of the position control arrangement by potentiometer pick-ups. The six-channel electronic controller REP-M6 consists of eight units,

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six having a thyratron trigger in conjunction with two 6НИП (6NIP) valve switches. The six are triggered from a time interval unit, the latter consisting of a binary thyratron counter. The ЭРУ-7К (ERU-7K) seven-channel control device consists of eight units again. Seven of these are the proper control circuits and the eighth is the power supply unit. Every control unit consists of an amplifier using a 6Zh5P valve in conjunction with an electronic time relay. The series production of REP IM instruments began in 1960; REP 2, REP 3, REP M6, BPU 6 and ERU 7K are produced in small batches by the experimental plant of the Institute of Automation. The multi-track instruments are not being series-produced. There are 10 figures and 1 table.

Card 4/4

S/133/62/000/004/004/008
A054/A127

AUTHORS: Kocho, V.S.; Panasyuk, A.D.; Samsonov, G.V.; Strel'chenko, A.G.; Khabrunyak, I.G.

TITLE: Cermet tips made of zirconium boride for thermocouples used in the continuous measuring of liquid steel temperatures

PERIODICAL: Stal', no. 4, 1962, 317

TEXT: To develop a highly heat resistant material for thermocouple tips used in the continuous measuring of liquid steel temperatures in open hearth furnaces, tests were carried out in 1959 - 1960 at the Institut metallokeramiki AN UKrSSR (Institute of Cermets of the Academy of Sciences UKrSSR) with thermocouple tips made of zirconium boride. The tips, 120 mm in length, 11 mm O.D. and 4 mm I.D. were tested in 185-ton and 370-ton basic open-hearth furnaces into which they were placed by hand-operated thermocouples, equipped with blocks, 25 mm in diameter and 90 mm in length, made of reinforcement steel. The zirconium boride tips, which are more heat-resistant than those made of quartz, were immersed 10 - 11 times with the immersion time increased to 40 - 45 sec. To establish the service life of zirconium boride tips for continuous operation in

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S/133/62/000/004/004/008
A054/A127

Cermet tips made of .....

the metal-slag bath, tests were carried out in 10-ton and 250-ton open-hearth furnaces. The thermocouple and the tip were placed in a water-cooled seamless steel tube tuyere with copper bottom. The tip was fixed to the device with 4 - 5 mm thick asbestos cord. The metal layer (3-5 mm thick) and slag layer (up to 25 mm) settling on the tuyere wall during immersion could be removed more easily if the tuyere was refractory-coated before immersion. However, it was found that in the arrangement described the zirconium boride tip only protected the thermocouple against the heat of the bath and not against the gases which broke the seam after a continuous immersion of 2 - 3 min. To eliminate this, the authors developed a three-layer tip shown in a figure, consisting of an external jacket against the heat, an inner alundum layer to ensure gas permeability, whereas the gap between them was filled with burnt aluminum oxide. The bottom part of the tip was filled with zirconium boride powder, to decrease its heat inertia. At the upper ends the tip is sealed with calcined decarburized asbestos. As a result of using the new ПР-30/6 (PR-30/6) type thermocouple tip, temperature measuring takes place with great accuracy: in the 1,500-1,650°C range the deviations are not greater than ± 1.5°C. The bath temperature is recorded with an ЭПП-09М (EPP-09M) type potentiometer, at a tape rate of 720 mm/h. The tips operate continuously in metal for at least 150 min, in slag for more than 60 minutes. There are 2 figures.
Card 2/2

KOCHO, V.S., doktor tekhn.nauk; STREL'CHENKO, A.G.

Effect of technological and heat engineering factors on temperature conditions in open-hearth furnace smelting in the finishing period. Met.i gornorud.prom. no.5:24-28 S-O '62.
(MIRA 16:1)

1. Kiyevskiy politekhnicheskiy institut (for Kocho). 2. Institut avtomatiki Gosplana UkrSSR (for Strel'chenko.
(Open-hearth process)

KOCHO, V.S.; STREL'CHENKO, A.G.; KHAVRUNYAK, I.G.

Temperature conditions of a 250-ton open-hearth furnace bath in the finishing period. Izv. vys. ucheb. zav.; chern. met. 5 no.9:84-91 '62. (MIRA 15:10)

1. Kiyevskiy politekhnicheskiy institut i Institut avtomatiki Gosplana UkrSSR.

(Open-hearth furnaces)

ACCESSION NR: AR3010405 S/0137/63/000/009/B011/B011

SOURCE: RZh. Metallurgiya, Abs. 9B84

AUTHOR: Kocho, V. S.; Strel'chenko, A. G.; Khavrunyak, I. G.

TITLE: Continuous control of bath temperature

CITED SOURCE: Sb. Kompleksn. avtomatiz, proiz-va stali. Kiyev, 1963, 137-146

TOPIC TAGS: temperature measurement, temperature control, steel, thermocouple PR30/6

TRANSLATION: Research showed the possibility of continuous (for 200-250 minutes) temperature measurement of liquid steel using a thermocouple PR 30/6 whose junction is protected by a heat-resistant gasproof tip. The tip consists of an outside covering of zirconium boride; the inner gasproof layer consists of Al_2O_3; between them is a charge of roasted Al_2O_3. The lower part of the tip is covered with zirconium boride to reduce thermal inertia. Four illustrations; five references. O. Blinov

SUB CODE: ML ENCL: 00

DATE ACQ: 30Sep63

Card 1/1

KOCHO, V.S.; STREL'CHENKO, A.G.; SABIYEV, M.P.; DRYAPIK, Ye.P.

Investigating the temperature conditions of the bath during its continuous control in the finishing period. Izv. vys. ucheb. zav.; chern. met. 6 no.8:169-174 '63. (MIRA 16:11)

1. Kiyevskiy politekhnicheskiy institut, Institut avtomatiki Gosplana UkrSSR i Kommunarskiy metallurgicheskiy zavod.

KOCHO, Valentin Stepanovich, doktor tekhn. nauk, prof.; SAMSONOV, Grigoriy Valentinovich, doktor tekhn. nauk, prof.; STRELCHENKO, Aleksandr Grigor'yevich, kand. tekhn. nauk; KINIYY, Pavel Stepanovich, kand. tekhn. nauk; YEFIMOV, V.A., doktor tekhn. nauk, retsenzent;

[Continuous liquid steel temperature control in the finishing period of open-hearth smelting] Nepreryvnyi kontrol' temperatury zhidkoi stali v period dovodki martenovskoi plavki. [By] V.S.Kocho i dr. Kiev, Tekhnika, 1965. 226 p. (MIRA 18:4)

1. Chlen-korrespondent AN Ukr.SSR (for Samsonov).

L 63996-65 EWT(d)/EWP(e)/EPA(s)-2/EWT(m)/EWP(w)/EWP(i)/EPF(n)-2/EWG(m)/EWP(v)/T-2/EWP(t)/EWP(k)/EWP(b)/EWA(h) IJP(c) JD/AT/JG/EM/AT/GH

AM5016672 BOOK EXPLOITATION UR/ 669.183.27

Kocho, Valentin Stepanovich (Doctor of Technical Sciencies); Samsonov, Grigoriy Valentinovich (Doctor of Technical Sciencies; Professor; Corresponding Member, AN USSR); Strel'chenko, Aleksandr Grigor'yevich (Candidate of Technical Sciencies); Kislyy, Pavel Stepanovich (Candidate of Technical Sciencies)

Continuous temperature control of liquid steel during finishing of open-hearth smelting (Nepreryvnyy kontrol' temperatury zhidkoy stali v period dovodki martenovskoy plavki) Kocho, Valentin Stepanovich [Kiev, Izd-vo "Tekhnika", 1965] 226 p. illus., biblio., tables. 2000 copies printed

TOPIC TAGS: continuous temperature measurement, open hearth temperature control, molten steel temperature, thermocouple manufacturing, thermocouple nozzle fabrication

PURPOSE AND COVERAGE: This book is intended for metallurgical engineers, shop workers who handle controlling and measuring instruments and automatic devices, as well as for members of scientific research and planning institutes and students of schools of higher education. A new method of continuous measuring of the temperature of molten steel in open-hearth furnaces in discussed and the effect of various technological and thermal factors on the temperature conditions of an open-hearth furnace bath is analyzed. The book shows that the introduction of units for continuous measuring of molten steel temperature is a great advantage

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from the standpoint of engineering economy. It boosts the furnace output, improves the steel quality, reduces the amount of rejected material, and decreases the fuel consumption.

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SUB CODE: MM SUBMITTED: 02Feb65 NO REF SOV: 118

OTHER: 010

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L 44575-66

ACC NR: AP6015685 (A, N) SOURCE CODE: UR/0413/66/000/009/0084/0084

28
B

INVENTOR: Kocho, V. S.; Strel'chenko, A. G.; Chuprovskiy, L. F.

ORG: none

TITLE: Thermometric method of measuring the flow of high-temperature gas. Class 42, No. 181318

9m

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 9, 1966, 84

TOPIC TAGS: gas flow measurement, high temperature gas, gas flow

ABSTRACT: This Author Certificate introduces a thermometric method of measuring the flow of high-temperature gas by measuring the temperatures at two cross sections of the controlled flow. To simplify the measurement, atomized water is introduced between the two measuring points. The water evaporates and the gas flow is calculated from the difference in temperature at the two cross sections and from the amount of heat consumed for reheating the atomized water to the temperature of the second cross section. [Translation] [LD]

SUB CODE: 20/ SUBM DATE: 26Feb65/

Card 1/1 LDM UDC: 681.121.83

L 09972-67 EWT(1) GD

ACC NR: AT6022280 SOURCE CODE: UR/0000/66/000/000/0083/0088

42

AUTHOR: Strel'chenko, A. I.; Bondarenko, V. M.

ORG: none

TITLE: A stripline guide with a lattice-type inner conductor and ferrite filling

SOURCE: Vsesoyuznaya naychnaya sessiya, posvyashchennaya Dnyu radio. 22d, 1966. Sektsiya kvantovoy elektroniki. Doklady, Moscow, 1966, 83-88

TOPIC TAGS: waveguide, waveguide propagation, waveguide design, ferrite

ABSTRACT: Figures 1 and 2 show a periodic structure formed by a flat lattice between two infinitely conductive planes. The space between the planes is filled with ferrite. Dispersion equations for this structure are derived. It is assumed that the lattice strips are infinitely thin and oriented at an arbitrary angle α to the direction of the energy propagation. The system extends to infinity in y and z directions. Of particular interest is a special case in which there is no relation between the electromagnetic field and the changes in y. Under these conditions all field components can be expressed in terms of H_y

$$H_x = -j\frac{\gamma^2 - \omega^2\mu\varepsilon}{\omega^2 k\varepsilon} H_{y_1}$$

$$H_z = -j\frac{x\beta}{\omega^2\varepsilon}\frac{\gamma^2 - \omega^2\mu\varepsilon}{x^2 - k_z^2} H_{y_1} \qquad (1)$$

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$$E_x = -\frac{\beta}{\omega\varepsilon} H_y,$$

$$E_y = -j\frac{k_z^2\beta}{\omega^3 k\varepsilon^2}\cdot\frac{\gamma^2 - \omega^2\mu\varepsilon}{\varkappa^2 - k_z^2} H_y, \qquad (1)$$

$$E_z = -\frac{\varkappa}{\omega\varepsilon_1} H_y,$$

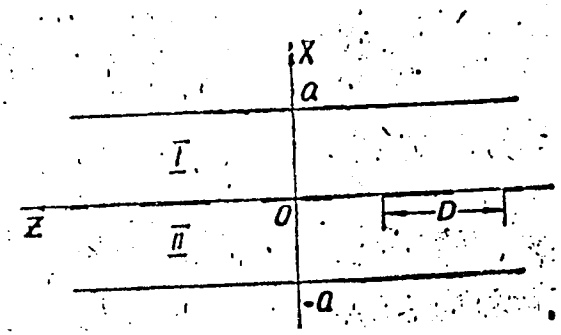

Fig. 1

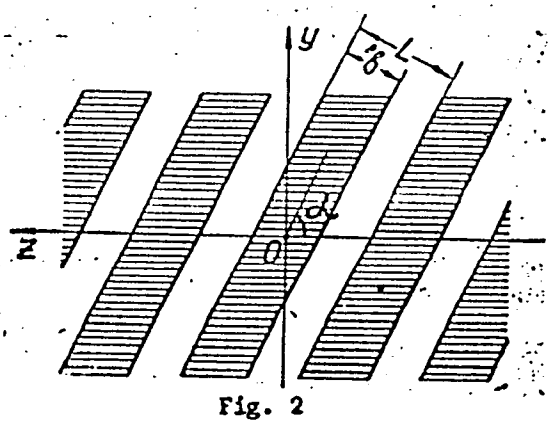

Fig. 2

where $H_y = Me^{-j(\alpha x + \beta z)} e^{j\omega t}$;

ε is the dielectric constant for ferrite, α , β are propagation constants for x and z axes, related to the propagation constant of wave γ by

$$\alpha^2 + \beta^2 = \gamma^2; \qquad k_z = \omega \sqrt{\mu_z \varepsilon}$$

Because of the periodicity of this system ($D = L/\cos\alpha$) in the direction of z any variable representing the field propagation in this system may be resolved into a series of space harmonics. The system can then be analyzed in terms of its isotropic regions I and II (see fig. 1), applying appropriate boundary conditions

$$F_y|_{x=\pm a} = 0, \quad F_z|_{x=\pm a} = 0 \qquad (2)$$

$$\left.\begin{aligned} &F_y \sin\alpha - F_z \cos\alpha = 0, \\ &(H_y^{\mathrm{I}} - H_y^{\mathrm{II}}) \sin\alpha - (H_z^{\mathrm{I}} - H_z^{\mathrm{II}}) \cos\alpha = 0, \\ &E_y^{\mathrm{I}} - E_y^{\mathrm{II}} = 0, \\ &E_z^{\mathrm{I}} - E_z^{\mathrm{II}} = 0 \\ &\qquad\qquad \text{for} \quad x = 0. \end{aligned}\right\} \qquad (3)$$

Substituting the field components derived in (1) into (2) and (3) a system of homogeneous linear equations is obtained in terms of eight unknown coefficients. Setting the determinant of this equation system equal to zero, a dispersion equation for it is obtained of the form

$$d_{10}\frac{\varkappa_{10}a}{2}\operatorname{tg}\frac{\varkappa_{10}a}{2}=d_{20}\frac{\varkappa_{20}a}{2}\operatorname{tg}\frac{\varkappa_{20}a}{2}, \quad (4)$$

$$d_{10}\frac{\operatorname{tg}\frac{\varkappa_{10}a}{2}}{\frac{\varkappa_{10}a}{2}}=d_{20}\frac{\operatorname{tg}\frac{\varkappa_{20}a}{2}}{\frac{\varkappa_{20}a}{2}}, \quad (5)$$

$$\left(\frac{k_z^2}{\Gamma_{10}^2}\sin^2\alpha+\frac{d_{10}}{d_{20}}\cos^2\alpha\right)\operatorname{th}\Gamma_{10}a=\left(\frac{d_{10}}{d_{20}}\frac{k_z^2}{\Gamma_{10}\Gamma_{20}}\sin^2\alpha+\frac{\Gamma_{20}}{\Gamma_{10}}\cos^2\alpha\right)\operatorname{th}\Gamma_{20}a, \quad (6)$$

where

$$d_{10}=\frac{\varkappa_{10}^2-k_z^2}{\varkappa_{10}^2+\beta_0^2-\omega^2\mu\varepsilon};\quad \Gamma_{10}=j\varkappa_{10}.$$

The equations (4) and (5) describe the quasi-waves H and E between the lattice and the one of the planes. They are equivalent to the system, consisting of two conductive metallic planes containing a longitudinally magnetized ferrite. Equation (6) describes slow waves. For de-magnetized ferrite, this equation produces an explicit ex-

pression for the propagation constant

$$\beta_0 = \frac{\omega\sqrt{\mu_0\varepsilon}}{\cos\alpha}, \qquad (7)$$

The authors also analyze the equation (6) for $\alpha = 90°$, $\alpha = 0$, and $\alpha \to \infty$. Orig. art. has: 3 figures, 9 formulas.

SUB CODE: 09,12,17/ SUBM DATE: 11Apr66/ ORIG REF: 003

L 09971-67 EWT(1) GG/GD

ACC NR: AT6022281 SOURCE CODE: UR/0000/66/000/000/0089/0094

49

AUTHOR: Bondarenko, V. M.; Strel'chenko, A. I.

ORG: none

TITLE: Propagation of electromagnetic waves in a comb-like flat surface system with a ferrite filling

SOURCE: Vsesoyuznaya nauchnaya sessiya, posvyashchennaya Dnyu radio. 22d, 1966. Sektsiya kvantovoy elektroniki. Doklady. Moscow, 1966, 89-94

TOPIC TAGS: wave propagation, electromagnetic wave, microwave delay, dielectric layer, ferrite

ABSTRACT: A cross section of a retardation system for microwaves is shown in fig. 1. The comb-like structure is filled with ferrite material, and the space between the comb and the flat surface $x = a$ is filled with another material. It is assumed that the system extends to infinity in the y and z axes. The z-axis coincides with the direction of energy propagation and the direction of the magnetizing (bias) field $\overline{H}_0$. The boundary surfaces enclosing the system have infinite conductivity. The field components within the system may be expressed, due to the presence of a periodic structure, by

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$$\sum_{\nu=-\infty}^{+\infty} \psi_\nu(x, y)\, e^{j(\omega t-\beta_\nu z)} \quad (1)$$

where

$$\beta_\nu = \beta_0 + \frac{2\pi\nu}{L} \quad (2)$$

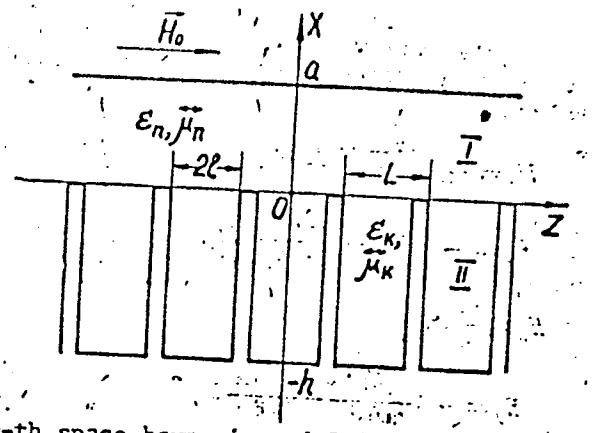

Fig. 1

β_ν is the propagation constant of the ν-th space harmonic and L is the period of the comb-like structure. For a field independent of changes in y, (1) can be simplified to

$$\sum_{\nu=-\infty}^{+\infty} \psi_\nu(x)\, e^{j(\omega t-\beta_\nu z)}, \quad (3)$$

The system can be divided into regions as shown in fig. 1 and the fields calculated for each region separately. Using this method and the initial expressions (1,2,3) the authors derive the wave propagation equation for this system

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$$a_0 h \operatorname{tg} a_0 h - \frac{\varepsilon_x}{x_n}\left(\frac{\beta_0 l}{\sin \beta_0 l}\right)^2 \frac{1}{1-\frac{d_{20}}{d_{10}}} \frac{h}{a} \frac{L}{2l} \gamma_{10} a \times$$

$$\times \frac{2(\operatorname{ch}\gamma_{10}a \operatorname{ch}\gamma_{20}a - 1) - \left(\frac{d_{10}\gamma_{10}}{d_{20}\alpha_{20}} + \frac{d_{20}\gamma_{20}}{d_{10}\gamma_{10}}\right)\operatorname{sh}\gamma_{10}a \operatorname{sh}\gamma_{20}a}{\operatorname{ch}\gamma_{10}a \operatorname{ch}\gamma_{20}a - \frac{d_{10}\gamma_{10}}{d_{20}\gamma_{20}}\operatorname{sh}\gamma_{20}a \operatorname{ch}\gamma_{10}a} = 0. \quad (4)$$

where

$$\gamma_{1,20} = \sqrt{\beta_0^2 - \frac{k_{zn}^2 + k_{\perp n}^2}{2} \mp \pm \sqrt{\left(\beta_0^2 - \frac{k_{zn}^2 + k_{\perp n}^2}{2}\right)^2 - k_{zn}^2 k_{\perp n}^2 + 2\beta_0^2 k_{zn}^2 - \beta_0^4}}; \quad k_{zn} = k_0\sqrt{\varepsilon_n}; \quad (5)$$

and

$$a_0 = \begin{cases} k_{\perp x} & \text{ferrite filling} \\ k_0\sqrt{\varepsilon_x} & \text{dielectric filling} \end{cases} \quad \sqrt{-\gamma_s^4 \frac{\mu_{zx}}{\mu_x} + 2\gamma_s^2 k_{zx}}; \quad k'_{\perp n,x} = k_0\sqrt{\varepsilon_{n,x}\left(\mu_{n,x} - \frac{k_{n,x}^2}{\mu_{n,x}}\right)};$$

$$k_0 = \frac{2\pi}{\lambda_0}.$$

The numerical analysis of the equation (4) was carried out on a computer. The numerical results agreed well with experimental data. Orig. art. has: 1 figure, 8 formulas.

SUB CODE: 20,12,09/ SUBM DATE: 11Apr66/ ORIG REF: 005/ OTH REF: 002

Card 3/3 fmb

L 07089-67

ACC NR: AP6018999 SOURCE CODE: UR/0109/66/011/006/1086/1091

AUTHOR: Tereshchenko, A. I.; Strel'chenko, A. I.; Zaytsev, A. Ye. 36 B

ORG: none

TITLE: Calculation of parameters of a lunar line [Reported at the 20th All-Union NTORiE, May 1964]

SOURCE: Radiotekhnika i elektronika, v. 11, no. 6, 1966, 1086-1091

TOPIC TAGS: waveguide, lunar line, UHF wave propagation, WAVEGUIDE PROPAGATION

ABSTRACT: General formulas are derived for the critical wavelengths of dominant and next-to-dominant modes, for the maximum power, attenuation factor, and characteristic impedance of a lunar line. This is an extension of the A. Y. Hu and A. Ishimaru theoretical work (IEEE Trans., MTT, 1962, v. 10, no. 4, 215, and 1963, v. 11, no. 4, 243). A numerical example proves that by

Card 1/2 UDC: 621.372.8.029.63

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ACC NR: AP6018999

offsetting the inner conductor away from the supporting web and by selecting suitable ratio of radii of both conductors, the waveguide can be made to pass a rather wide UHF band. Cutoff wavelengths of a lunar line with 3 and 1.6 cm radii and 0.3-cm web thickness were measured with an error of 0.5%; the experimental data differed from the estimated by 5—8%. The lunar line is recommended for UHF transmissions as it has a wide passband and small size, and is not deformed when filled with gas under pressure. Orig. art. has: 6 figures and 15 formulas.

SUB CODE: 09 / SUBM DATE: 26Feb65 / ORIG REF: 004 / OTH REF: 003

Card 2/2 LC

ACC NR: AP6035737 SOURCE CODE: UR/0413/66/000/019/0101/0101

INVENTORS: Chernyak, R. Ya.; Kirilyuk, N. I.; Pushenko, A. I.; Oreshkin, Ye. S.; Strel'chenko, A. M.; Sal'kov, Yu. G.

ORG: none

TITLE: An information storage using magnetic cards. Class 42, No. 186762 [announced by Institute of Cybernetics, AN UkrSSR (Institut kibernetiki AN USSR)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 19, 1966, 101

TOPIC TAGS: information storage and retrieval, magnetic recording, storage device

ABSTRACT: This Author Certificate presents an information storage using magnetic cards. The storage unit includes an input keyboard, a vacuum drum for transferring the cards, and a buffer storage device (see Fig. 1). The design increases the

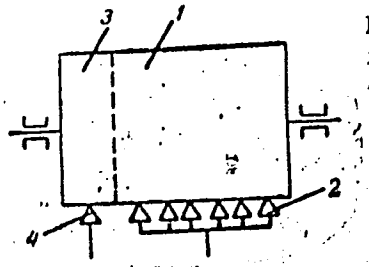

Fig. 1. 1 - vacuum drum; 2 - magnetic heads for recording the readout from the magnetic cards; 3 - surface of the vacuum drum, free from magnetic cards; 4 - magnetic heads of the buffer storage device

UDC: 681.142.07

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ACC NR: AP6035737

reliability and reduces the equipment requirement. The buffer storage device is made on the part of the vacuum drum surface free from magnetic cards. This part of the surface is coated with a nickel-cobalt film. Orig. art. has: 1 figure.

SUB CODE: 09/ SUBM DATE: 070ct65

Card 2/2

STREL'CHENKO, B.I., dots., kand. voyennykh nauk, polkovnik;
SOKOLOV, I.A., polkovnik, red.

[Cooperation of rocket forces and artillery with motorized infantry and tanks] Vzaimodeistvie raketnykh voisk i artillerii s motopekhtoi i tankami. Moskva, Voenizdat, 1965. 100 p. (MIRA 18:3)

STREL'CHENKO, I.I., brigadir rabochikh ochistnogo zaboya

One year of work in the new mine face. Ugol' Ukr. 5 no.9: S '61. (MIRA 14:9)

1. Shakhta No.5-bis "Trudovskaya" tresta Stalinugol'.
(Donets Basin--Coal mines and mining)

STARTSEV, V.I., inzh.; STREL'CHENKO, I.I.; ANTIPOV, V.A.; BOYKO, A.M.; PILIPENKO, G.I.; STOLIKA, S.I.

Performance of Communist Youth League brigades. Ugol' 39 no.11:27-32 N '64. (MIRA 18:2)

1. Kombinat Kuzbass ugol' (for Startsev). 2. Shakhta No.5-bis "Trudovskaya" (for all except Startsev).

STREL'CHENKO, N. N.

PA 65T105

USSR/Radio Broadcasting
Radio Towers

May 1948

"Development and Introduction of New Techniques in Radio Communications and Radio Broadcasting," N. N. Strel'chenko, M. A. Shkud, Engineers, 2 pp

"Vest Svyazi - Elektro-Svyaz'" No 5 (98)

Radio is one of the fields in the Soviet Union undergoing maximum development. At present research is conducted in lowering the cost of new equipment, in particular, radio towers. Another research project is reducing the amount of metal used in towers. Briefly describes other progress made by Soviet radio engineers and technicians.

65T105

AUTHOR: Strel'chenko, N., Member of the Committee

SOV/107-58-11-3/40

TITLE: On the Road of Technical Progress (Po puti tekhnicheskogo progressa). The Role of Radio-Electronics in Automation, and the Tasks of Radio Amateurs (Rol' radioelektroniki v avtomatizatsii i zadachi radiolyubiteley)

PERIODICAL: Radio, 1958, Nr 11, pp 3-4 (USSR)

ABSTRACT: The author describes the important part played by radio electronics in automation, as the latter has made it possible to produce highly sensitive pick-ups, measuring instruments, amplifiers with a high coefficient of amplification, various frequency characteristics and a small time constant, and high-speed computers. Radio electronics has also helped to achieve accuracy in mass production using automation. An example is given showing the organization of the automatic assembly of ball-bearings at the 1-yy Gosudarstvennyy podshipnikovyy zavod (1st State Ball-Bearing Plant). It also increases the flexibility of automatic systems by the program control of machine tools. It also has great possibilities in the automation of processes in power-engineering, hydraulic engineering, in the metallurgical, chemical, mining and oil

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SOV/107-58-11-3/40

On the Road of Technical Progress. The Role of Radio-Electronics in Automation, and the Tasks of Radio Amateurs

industries, in transport and in telecommunications. The author then shows how radio-electronics and nuclear physics together have many uses in automatic systems. He says that radio amateurs should help the cause of automation by producing simple and reliable measuring instruments and using transistors more extensively in their designs.

ASSOCIATION: Gosudarstvennyy nauchno-tekhnicheskiy komitet Soveta Ministrov SSSR (State Scientific and Technical Committee of the Council of Ministers of the USSR)

Card 2/2

STREL'CHENKO, N. P.

Strel'chenko, N. P. -- "Excretory Processes in the Alimentary Canal of Animals." Moscow Order of Lenin Agricultural Acad imeni K. A. Timiryazev, Moscow, 1955 (Dissertation for the Degree of Candidate in Biological Sciences)

SO: Knizhnaya Letopis', No 24, 11 June 1955, Moscow, Pages 91-104